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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, RITA RAMESH	
ART UNIT	**PAPER NUMBER**
1792	

NOTIFICATION DATE	DELIVERY MODE
01/30/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/758,112	WOO ET AL.	
	Examiner	Art Unit	
	RITA R. PATEL	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-21,23 and 25-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-21,23 and 25-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/6/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/1/08 has been entered.

Information Disclosure Statement

The information disclosure statement filed 8/6/08 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered. More specifically, the reference No. KR 10-1999-001480A has not been submitted with an explanation of relevance.

Response to Applicant's Arguments / Amendments

This Office Action is responsive to the amendment filed on 9/30/08. Claims 1, 3-21, 23, and 25-27 are pending. Claims 2, 22, and 24 have been canceled. Claims 1 and 23 have been amended. Claims 26 and 27 are new.

Applicant's arguments have been fully considered, but are not persuasive. Thus, claims 1, 3-21, 23, and 25-27 are rejected for the reasons of record.

In response to Applicant's amendments to claim 1, including "an electrode which discharges plasma inside of the discharge box", these amendments do not overcome the prior art because the prior art Engel teaches an apparatus which is capable of inherently discharging a plasma. Applicant argues that the invention of Engel shows a complete separate ozone generating system, not disclosed as a plasma discharge unit as claimed, and it is in use with a washing machine 10 but is not formed inside the casing of the washing machine since it is a separate block as illustrated. Firstly, although Engel does not label its ozone generating system as a "plasma discharge unit" as claimed, the ozone generating system (discharge box) in combination with the supply line 12 (inflow passage), electrodes 56 (electrode) and high voltage corona generator (high voltage generator), still embodies all the claimed components of the invention and thus reads on it. Moreover, in Engel a cold plasma is inherently create since a cold washing water is exposed to a plasma created by a dielectric barrier discharge, in the case of Engel, the dielectric barrier discharge is formed by the electrodes. According to the following Wikipedia® reference, under the subtitle "Cold Plasma", it is recited "In the cold plasma method, pure oxygen gas is exposed to a plasma created by a dielectric barrier discharge. The diatomic oxygen is split into single atoms, which then recombine in triplets to form ozone" (ozone. (2009). In *Wikipedia*. Retrieved January 26, 2009, from : http://en.wikipedia.org/wiki/Ozone.). Therefore, even though Engel does not call its ozone generating system a plasma discharge unit, it inherently still creates plasma and

reads on Applicant's structural claims. Moreover, a plasma is defined as a gas consisting of ions, electrons, and neutral particles; the behavior of the gas is dominated by the electromagnetic interaction between the charged particles (plasma. (1992). In *Academic Press Dictionary of Science and Technology*. Oxford: Elsevier Science & Technology. Retrieved January 26, 2009, from http://www.credoreference.com/entry/3143471/.). Applicant fails to remark on the integral differences between the ozone generating system of Engel and the plasma discharge unit as claimed; Applicant merely says since they are called different things, they are not analogous. This argument is not convincing and thus, the position is maintained that Engel's disclosure of an ozone generating system (discharge box) in combination with the supply line 12 (inflow passage), electrodes 56 (electrode) and high voltage corona generator (high voltage generator) reads on the claimed plasma discharge unit.

Secondly, Applicant argues that it would not have been obvious to one of ordinary skill in the art at the time of the invention to have a duplicate filter formed at the inflow passage of the washing machine. However, Engel already teaches filters 28, 30 used in a recirculation part from the holding tank 14 (discharge box), which are used to filter processed washing fluid. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an additional filter located at the inflow passage for filtering the washing fluid when the recirculation filters are not employed. Moreover, Engel's use of employing filtering devices in the fluid route of its washing apparatus already teaches the commonly known and beneficial use of having filters to filter washing fluid. It is beneficial to filter washing fluid of said washing machine to allow

pure cleaning fluid to reach the washing tub; dirty fluid is not desirable to be used in a washing machine. No new or unexpected results are produced by merely duplicating Engel's already taught filtering means 28, 30. Applicant fails to point out any new or unexpected results that are produced in Applicant's invention by having a filter formed at the inflow of the washing machine.

Finally Applicant argues that it would have not been obvious to one of ordinary skill in the art at the time of the invention to combine the electrodes and generator of Engel into the casing of the washing machine, such that they are all formed within the casing. Applicant argues that rewiring would be necessitated and makes a comparison to combining these parts of Engel to combining a car and a trailer which requires the use of a hitch. However, this is not a good analogy because a car and trailer would require attachment by a third part, namely the hitch, but in the invention of Engel, the electrodes and generator are already attached to the washing machine. In Engel, they are merely illustrated as being attached outside the casing of the washing machine, but it is commonly known in the art to make machines more compact and portable and thus make pieces smaller and form them together. No new wiring would be required by merely having the electrodes and generator of Engel put inside the casing of the washing machine, since these parts are already functionally connected to the washing machine. It is desirable to have large components of household devices formed in a compact way such that they are formed into a single integral piece.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-6, 23, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engel et al. herein referred to as "Engel" (US Patent No. 5,097,556).

Engel teaches laundry washing machines 10, conventionally known in the art to have an outer casing with a tub and rotatable drum therein, as well as a water supply line 12 (inflow passage) and a holding tank 14 (discharge box) connected thereto. The holding tank 14 has ozonators formed therewith by electrodes 56 with a high voltage corona generator attached. Filters 28, 30 filter water at a recirculation path, however, it would have been obvious to one of ordinary skill in the art at the time of the invention to have another filter at the inflow passage. Although Engel indicates using filters 28, 30 at a recirculation path, it would have been obvious to one of ordinary skill in the art at the time of the invention to duplicate these filters such that one is located at the inflow passage for achieving already known in the art means for filtering. It is well settled that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. *In re Harza*, 124 USPQ 378 (CCPA 1960). No new or unexpected results are produced by merely duplicating Engel's already taught filtering means 28, 30. Engel's use of employing filtering devices in the fluid route of the washing apparatus already teaches the commonly known and beneficial use of having

filters to filter washing fluid. It is beneficial to fluid washing fluid of said washing machine to allow pure cleaning fluid to reach the washing tub.

Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electrodes and high voltage generator to the washing machine of Engel, such that they formed a singular piece and that the electrodes/generator were formed within the washing tub. Such a combination of parts would have been obvious to one of ordinary skill in the art at the time of the invention since combining two parts to form as one makes the apparatus more compact. Also, Engel teaches this device to be capable for use with multiple washing machines, for example in a Laundromat setting, however for use with a singular machine, for example for personal use at home, it would have been obvious form the electrode/generator singularly with the washing machine. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make integral the electrodes/generator with the washing machine since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). In Engel, these electrodes and generator are merely illustrated as being attached outside the casing of the washing machine, but it is commonly known in the art to make machines more compact and portable and thus make pieces smaller and form them together. No new wiring would be required by merely having the electrodes and generator of Engel put inside the casing of the washing machine, since these parts are already functionally connected to the washing machine. It is desirable to have large

components of household devices formed in a compact way such that they are formed into a single integral piece.

Engel also discloses a pump 15, a re-supply line 17, and a line formed between the storage tank 18 and holding tank 14, these lines cumulatively read on Applicant's claim for a circulation duct. Engel's teaching of a supply pump 13 reads on Applicant's claim for a circulation pump, and Engel's nozzle 36 reads on Applicant's claims for a spray nozzle.

Claims 7-10, 12, 13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engel as applied to claims above, and further in view of Lowther (US Patent No. 3,954,586).

Engel teaches the claimed invention, except fails to go into detail regarding the electrode set-up and its use with dielectric particles. Lowther, however, teaches the details of a corona generator, and specifically, the generator has a pair of parallel spaced-apart electrodes which are used with Titanium Dioxide and/or Alumina (col. 17, line 51; col. 18, line 17). Lowther indicates that a dielectric coating is provided on the internal facing surface of at least one of said electrodes, and correspondingly, the surfaces are individually coated (col. 20, claims 9-10). It would have been obvious to one of ordinary skill in the art at the time of the invention to dielectric particles Alumina and Titanium Dioxide with electrodes in an ozone making high-voltage generator in Engel, as taught by Lowther because Lowther teaches these dielectric particles are

often desirable in achieving the highest possible dielectric constant (col. 18, lines 40-41).

Secondly, Engel fails to indicate an air supply in the electrode/generator set-up. However, Lowther discloses the known in the art means for air supply to the electrodes (col. 20, claim 12). The electrode/generator produces optimal amounts of ozone with a supply of air therethrough. It would have been obvious to one of ordinary skill in the art at the time of the invention to have an air supply as taught by Lowther in the apparatus of Engel, since Lowther provides motivation for having an air supply by teaching it is known in the art to optimize the air gap in the electrode/generator set-up. See also Fig. 9.

Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engel and Lowther as applied to claims above, and further in view of Matsumoto et al. herein referred to as “Matsumoto” (US Patent No. 5,768,730).

Engel and Lowther teach the claimed invention, except fail to disclose a contamination sensor in the washing machine. Contamination sensors are known in the art of washing machines and commonly used to sense the cleanliness of the washing water. Matsumoto teaches a washing machine having a contamination sensor (col. 10, line 45). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a contamination sensor in a washing machine of Engel, as taught by Matsumoto to be known in the art. Measuring contamination in washing water is helpful

in determining the efficacy of the washing machine; in the process of laundering it is necessary to provide clean/optimal washing fluid to achieve desired cleaning.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Engel and Lowther as applied to claim 13 above, and further in view of Moody (US Patent No. 2,732,338).

Engel and Lowther teach the claimed invention except fail to indicate use of glass pellets with the Alumina. However, Moody teaches using glass beads in an electrode ozone generating machine. It would have been obvious to one of ordinary skill in the art at the time of the invention to use glass beads in the electrode/generator apparatus of Engel and Lowther, since Moody teaches it is beneficial to use since glass pellets are used to improve organic compound gas contact (col. 2, lines 38-42). Improving gas contact is desirable in ozone generating apparatuses.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RITA R. PATEL whose telephone number is (571)272-8701. The examiner can normally be reached on M-F: 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792

/Rita R. Patel/
Examiner, Art Unit 1792